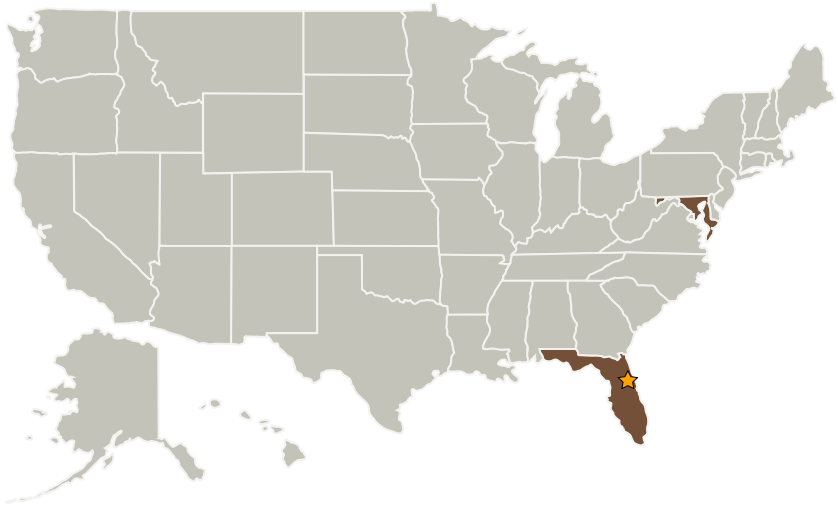
C-Band SATCOM Range Communications System for ELVs using ESAs and High Dynamics Modem, Phase II

Completed Technology Project (2005 - 2007)

Project Introduction

The development and implementation of passive phased array antennas (PAAs) offers significant performance benefits over the current active arrays. The keys to successful development are the low-loss phase shifters and the integration of these phase shifters into modular and scaleable antenna architecture for broad utilization for high data rate communications. The Phase I effort designed a dual-beam, dual-band 4GHz and 6 GHz along with an optimized High Dynamics Modem to support SATCOM telemetry utilizing commercial satellite services, specifically the Intelsat system. The proposed effort will build on this Phase I Phased Array ? High Dynamics Modem design development and include the fabrication, testing and integration of the PAA antenna and high dynamics modem with appropriate RF transceiver (COTS) such that an Intelsat ready communications system test unit is built, tested, validated and delivered to NASA for evaluation.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Paratek Microwave, Inc.	Supporting Organization	Industry	Columbia, Maryland

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Florida	Maryland

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.2 Radio Frequency
    - TX05.2.6 Innovative Antennas